



Improving Student Learning

Summary Report for Cycle 2 (2003-2006)



Government of
Alberta
Sovereignty
Responsibility



Alberta
Education

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Both the full report and summary report are available on the AISI website at
<http://education.alberta.ca/aisi>

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Background

The Alberta Initiative for School Improvement (AISI) is a province-wide school improvement program in which individual school authorities decide:

1. which areas of student learning and performance need attention,
2. how to go about improving these areas (new teaching strategies, student support), and
3. how to provide evidence that improvement has taken place (measuring student performance).

AISI was developed through a collaborative partnership in 1999 and first implemented in all Alberta school authorities in the 2000/2001 school year. The goal of this program is to improve student learning and performance by fostering initiatives that reflect the unique needs and circumstances of each school authority. AISI provides approximately \$70 million targeted funding annually to school authorities for specific local improvement projects. Initially allocated for three years from 2000 to 2003, funding was extended for a second three-year cycle from 2003 to 2006. The Alberta Government invested \$202 million dollars in support of school improvement projects during Cycle 1 of AISI; during Cycle 2, it invested \$203 million with an additional \$18 million provided by the school authorities.

AISI represents an effective approach that focuses on improving student learning through partnerships and collaboration in a culture of continuous improvement, inquiry, and reflection. Continuous improvement with a focus on integrating and sustaining effective practices now permeates the education community in Alberta.

Cycle 1 (2000-2003)

This collaborative initiative between government and its partners¹, together with Alberta teachers, administrators, trustees, parents, and universities is achieving a common goal – improved student learning and performance. AISI provides funding for every school authority in the province to establish its own improvement projects to address local needs and circumstances. AISI is in the vanguard of improvement initiatives around the world. Cycle 1 demonstrated that trust in local priorities and implementation was justified.

*The AISI Provincial Report for Cycle 1*² (Alberta Learning AISI, 2004) documents the processes and outcomes of the AISI program from its inception in 1999 through its first cycle of implementation from 2000 to 2003. The results indicate that AISI had a profound impact on the culture of schools in Alberta. Among the impacts were improved student learning, development of a culture of continuous improvement, a renewed focus on teaching and learning, better decision making based on evidence, job-embedded professional development, and shared and distributed leadership.

¹ Alberta Home and School Councils' Association (AHSCA), Alberta School Boards Association (ASBA), Alberta Teachers' Association (ATA), Association of School Business Officials of Alberta (ASBOA), College of Alberta School Superintendents (CASS), Universities (Alberta, Calgary, Lethbridge).

² Alberta Learning. Alberta Initiative for School Improvement. (2004). *Improving student learning: Provincial report for cycle 1 (2000-2003)*. Edmonton: Author.

During its initial three years of implementation, AISI had a profound impact on the culture of schools in Alberta.

AISI Impacts During Cycle 1 (2000-2003)

- | | |
|---|--|
| 1. Improved student learning | 7. New knowledge |
| 2. Culture of continuous improvement | 8. Evidence-based decisions |
| 3. Renewed focus on teaching and learning | 9. Job-embedded professional development |
| 4. Innovation and creativity | 10. Shared and distributed leadership |
| 5. Shared language | 11. Engaged parents |
| 6. Research in classrooms | |

Impact of Cycle 2 (2003-2006)

Cycle 2 of the Alberta Initiative for School Improvement (AISI) began in the 2003/2004 school year. All school authorities were eligible for targeted AISI funds for improvement projects that addressed local needs and circumstances.

What overall effect did the second cycle of AISI have on student learning (determined by provincial measures and local assessments), its intended beneficiaries (students and parents) and its participants (teachers)? Change over time was determined on four categories of measures: provincial measures, local assessments, student and parent surveys, and teacher surveys.

Average annual effects are based on improvement over a three-year average baseline, that is, Cycle 1 results are based on improvement over the average of 1998 to 2000 and Cycle 2 on a baseline of the average of 2001 to 2003, the first three years of AISI implementation. Thus the results represent continuous improvement over two cycles or six years of AISI implementation. In both cycles, student achievement and satisfaction increased over time.

Improved Achievement

Improvement in academic achievement was demonstrated by higher results on Provincial Achievement Tests, diploma exams, and locally determined measures. Some quotations illustrate participants' interpretation of these results.

Where work identifiable with elements of the inquiry rubric was occurring in a sustained way, we found both the stories and the hard data to demonstrate that inquiry transforms learning environments and makes significant improvement in student learning. The trend is clear that the schools in this project exhibit improved PAT results beyond expectations in all four core subjects, in particular in the percentage of students achieving in the excellence category. Project 10443

There were also some surprises. Most notable was that even though our stated goal was to improve Language Arts scores as measured by the PATs we found that teachers applied differentiation into other areas as well and there was significant improvement from year one

results to year three results. Could the growth and improvement in other subject areas be attributed to greater success in Language Arts alone or was this the result of applied differentiation to all subjects? We feel it was a direct result of all the components that went into making better teachers and learners through this AISI project. Project 10110

In addition to academic achievement, project teams noted that students increased confidence, behavior/attitudes, engagement, and leadership.

Mixed Results

There were some mixed results (e.g., improvement on some measures and decline on others; improvement in years 1 and 2 and a decline in year 3). Some projects demonstrated little or no improvement.

Unfortunately, our school targets were not attained in the area of student achievement in the standard of excellence in writing, as indicated by the Provincial Achievement Test results. ... As a staff that has experienced dramatic turnover, we will have to continue our efforts to disaggregate our data to the sub strands within the Writing Assessments to help focus instructional goals and strategies. This will continue to be an area of major focus at the school. Project 10511

Some project teams explored their data to try to identify reasons for change over time. There was some evidence of the direct impact of AISI projects on student achievement by disaggregating data and comparing results with different groups or different years (e.g., results by degree /length of participation). This type of analysis helps to identify implications and courses of action.

Further data analysis provided the following:

- schools with significant ESL populations and involved in the project all three years demonstrated the highest rate of growth in students achieving acceptable standards in ELA at grade 3, and 6;
- junior high schools involved in the 3 years of the ESL AISI project demonstrated a higher rate of growth in percentage of ESL students meeting acceptable standards than junior high schools that participated in only one or two years of the project; and
- schools that embraced this ESL AISI project and strategically planned for school responses to the initiative demonstrated a higher rate of growth than schools that did not embrace a total response to the ESL AISI project. Project 10351

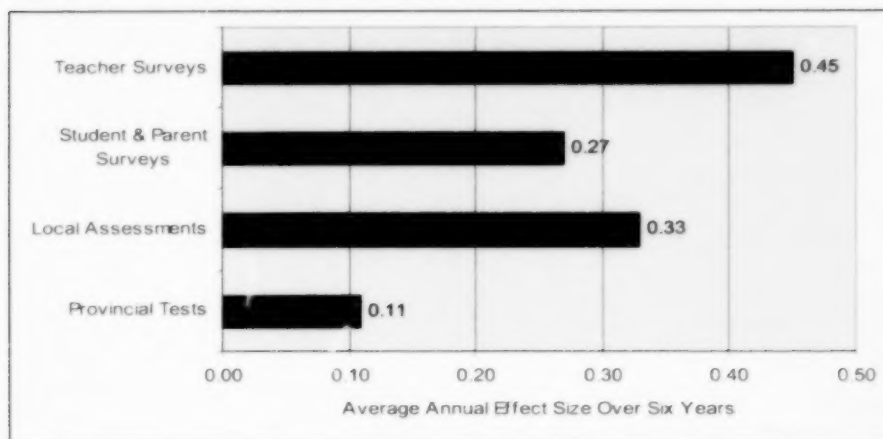
Improvement Over Time

What overall effect has AISI had over six years of implementation? Although projects in Cycle 1 and 2 were different, AISI is a six-year, province-wide improvement initiative whose goal, principles, criteria, and procedures have remained constant. Furthermore, the school districts are the same and almost all schools in the province participated in AISI. Since Cycle 2 projects tended to be larger in scope involving more teachers and students, it was harder to demonstrate an impact. The larger the number of students, the more difficult it is to demonstrate an effect. Taking the average of the effects over the two cycles, it is possible to estimate annual benefits over six years. This procedure results in effect sizes of 0.45 for teacher growth and satisfaction, 0.27 for student and parent satisfaction, 0.33 for locally determined student achievement, and 0.11 for student achievement measured by provincial tests. These average annual effects can be

thought of as the return on investment of AISI in improving education in the province for the benefit of its students and teachers. Figure 1 presents the results.

Cycle 2 of AISI consolidated emerging knowledge and synthesized what works. It built on the enthusiasm and commitment from the first cycle and expanded AISI's sphere of influence to more teachers and students in Alberta.

Figure 1: Average Annual Effects of AISI Cycles 1 and 2



Scope and Funding

All school authorities in Alberta (ECS to grade 12) received AISI funding. School authorities reduced the number of projects from 828 in Cycle 1 to 483 in Cycle 2 by creating projects that were larger in scope. Public school authorities (public, separate, francophone and charter) shifted the percentage of projects that involved a single school to projects that included ten or more schools, which resulted in increasing the percentage of projects that involved 500 or more students by 20%. Private school authorities tend to consist of a single school so there was little change from the first to the second cycle, although there were slight increases in the percentage of projects involving larger numbers of students.

Methods and Data Sources

AISI may be seen as a large group of action research projects on school improvement. The initiative can be thought of as a set of quasi-experimental projects focused on improving learning. Each project must identify target outcomes and find ways to measure these outcomes. The essential approach to evaluation is to examine change over time on measures of student achievement, satisfaction or other valued outcomes. In research design terminology, each project is conducted as a one-group pretest-posttest design or time-series design.

The provincial report combines the projects to give a provincial picture. Combining results across projects is a way of introducing both "replication" and "differentiation" into the design.

That is, like projects can be clustered to determine if they give consistent results and unlike projects can be differentiated to determine if some kinds of initiatives work better than others.

This report uses multiple approaches – including methods, data sources, perspectives, and levels – and triangulates and corroborates findings to give us confidence in the evidence. Multiple points of reference provide comparisons over time, groups, and targets. It provides both cross-sectional and longitudinal data to indicate if performance is improving or declining.

AISI Projects

Descriptive statistics are based on 483 projects operating in active public and private school authorities. Categories are not mutually exclusive.

- *Targeted Student Groups* – Most projects included all students (74.1%). Some projects focused on students at risk (11.2%) and special-needs students (7.5%).
- *Subject Areas* – Language arts/literacy accounted for 30.0% and mathematics/numeracy accounted for 17.0% of the projects. One hundred and 11 projects (23.0%) focused on all core subjects (language arts, mathematics, social studies, and science). Two other areas addressed were fine arts (8.1%) and science (7.0%).
- *Themes* – The major themes were capacity building [primarily through teacher professional development (25.9%) and professional learning communities (11.8%)]. Other themes included ECS/school readiness (11.0%), technology integration (7.9%), and assessment (7.2%).
- *Divisions/Grade Levels* – There were projects at all levels of instruction. Seven in ten projects (73.1%) included students in K to grade 3, half included students in grades 4 to 6 (51.6%), grades 7 to 9 (50.9%), and grades 10 to 12 (37.1%). Most projects covered multiple levels of instruction.
- *Instructional Strategies* – The most widely used teaching strategies were experiential learning (127 projects, 26.3%), enrichment (106 projects, 21.9%), differentiated instruction (103 projects, 21.3%), and accommodating learning styles (87 projects, 18.0%).

Project Effects

Project effects are based on 241 public school authorities. These projects typically involved multiple schools and grade levels, and larger numbers of students. Effects were determined on four categories of measures: provincial tests (provincial achievement tests at grades 3, 6, and 9, and grade 12 diploma exams), local assessments (standardized tests and locally determined student achievement measures), student and parent surveys (parent satisfaction and student satisfaction, behavior, and attitudes), and teacher surveys (teacher growth [knowledge, skills, and attitudes] and satisfaction).

- *Three-Year Average Effects* – Three-year average effects were positive on all categories of measures. Three-year average effects were highest for locally determined student achievement (0.33) and teacher growth/satisfaction measures (0.34). Project effects on student and parent satisfaction were small (0.20).

- *Average Annual Effects* – Annual effect sizes for each category of results, calculated over all projects having such measures, indicate that results consistently increased from the first to the third year for local tests, student and parent satisfaction, and teacher growth and satisfaction. Teacher surveys and local assessments demonstrated the greatest increase over time. Annual effects on provincial tests were minimal to small. Student outcomes also included confidence, behavior, attitudes, and engagement.
- *Effects by Project Classification* – Effects were calculated for the five major types of public projects: professional development, literacy, mathematics, technology, and school climate.
 - ◆ *Professional development projects* used all types of measures to demonstrate evidence of success. Small effects were found for achievement measured by local tests (0.20) and moderate effects for teacher growth and satisfaction measured by surveys (0.42). Professional development projects had minimal impact on achievement measured by provincial tests and student and parent surveys.
 - ◆ *Literacy projects* had a positive impact on achievement measured locally (0.24) and student and parent satisfaction measured by surveys (0.24). These projects had minimal impact on achievement measured by provincial tests or teacher growth and satisfaction.
 - ◆ *Mathematics projects* had moderate effects on teacher growth and satisfaction (0.47). They also impacted student achievement determined locally (0.13) and student and parent satisfaction (0.16).
 - ◆ *Technology projects* demonstrated the strongest evidence of success. Moderate effects were found for achievement on local tests (0.59), teacher growth and satisfaction (0.60), and student and parent satisfaction (0.47). The five technology projects that used provincial tests as a measure of success also had a positive effect (0.31).
 - ◆ *School climate projects* demonstrated small positive effects on locally determined achievement (0.26), teacher growth and satisfaction (0.29), and student and parent satisfaction (0.19).
- *Student achievement* measured by local assessments was strongest in technology projects (0.59), followed by school climate (0.26) and literacy (0.24) projects. Professional development (0.20) and mathematics (0.13) projects also had a positive effect on student achievement. Student achievement measured by provincial tests was small (0.31) in technology projects and minimal (0.10) in school climate projects.

Effective Practices

The AISI Project Final Report (APFR) required project teams to provide information in four major areas: student outcomes, effective practices, integration and sustainability, and a summary. Qualitative data analysis software, QDA Miner³, was used to analyze Section G of 235 public⁴ APARs. Results are reported in descending order of frequency.

³ Péladeau, N. (2004). *QDA miner: Qualitative data analysis software user's guide*. Montreal, QC: Provalis Research.

⁴ These public APFRs include public and separate school authorities and charter schools.

Table 1: Major Types of Strategies Identified by Project Participants

Instructional Strategies	Student Assessment	Project Management/ Coordination	Professional Development	Parental Involvement & Communication
Small groups/ 1-1	Rubrics	Principal/administrator	Workshops/	Newsletters
Differentiation	Assessment for learning	AISI coordinator	conferences	School council
MI*/brain research	Diagnostics	Lead teachers	Collaboration	Surveys
Inquiry based learning	Anecdotal assessment	School teams	PLCs**	Parent/teacher/student conferences
Problem solving	Self-assessment	Consultants	Mentoring/ coaching	Volunteering
Guided reading	Common tests	Steering committee	Lead teacher	Websites
Manipulatives	Portfolios	School-based coordination	Modeling	Personal contact
Graphic organizers	Standardized tests	Central office staff	Regular PD days	Workshops
	Ongoing assessment	Superintendent		Committees
	Pre- & post-tests			
	Peer evaluation			

*MI means multiple intelligences

**PLCs are professional learning communities

- *Strategies* – Teams identified a number of effective practices that they used during Cycle 2. Practices include instructional strategies, student assessment, project management/ coordination, professional development, and parental involvement and communication. The major types of strategies are identified in Table 1. When most projects report using a number of strategies, it is difficult to attribute the impact of any single strategy on student achievement and performance.
- *Integration and Sustainability* – Teams identified several ways to integrate and sustain what is being learned. Strategies included using purchased resources, collaborating/sharing, time for ongoing professional development, changing the culture, and developing leadership capacity.
- *Successes* – Teams identified factors that contributed to project success. Factors included time and resources, professional development, teacher collaboration and sharing, regular assessment, and leadership/staff development.
- *Challenges* – Ongoing challenges included gathering and using data (including finding appropriate measures of student performance), professional development, time away from the classroom, finding and using substitute teachers, and administrator support.
- *Unanticipated Results* – Project teams identified unanticipated results in enthusiasm, support, interest, time, assessment, and leadership.
- *Celebrations* – Projects were celebrated through recognition and awards, conference presentations, media coverage, and presentations.

Case Studies

Four case studies illustrate AISI projects that demonstrated high or medium effects on two or of the four categories of measures: provincial tests, local assessments, student and parent surveys, and teacher surveys. One project addressed English as a Second Language (ESL) learners who are a growing segment of our student population and groups who need assistance to be successful. One focused on numeracy, a major content area of AISI projects, and two focused on strategies: high school completion and technology. Presented in the words of their project coordinators, the case studies demonstrate the variety of approaches project teams took in implementing their AISI projects during Cycle 2. Their observations speak of the richness of the AISI experience for students and teachers alike. The case studies also identify some commonalities that made these projects successful.

- *Purpose* – Projects identified a need in their district and developed a plan to address the need, whether groups of students, a particular content area, or a strategy. A common purpose that is understood is essential for success.
- *Interventions* – All projects used a variety of instructional strategies. In improvement initiatives undertaken in classrooms, it is not possible to implement a single intervention whose impact can be directly attributed to it.
- *Assessment Strategies* – The projects used a variety of assessment strategies to demonstrate success. These included provincial tests, local and standardized tests, and satisfaction surveys. The number of measures used ranged from five to 19.
- *Impact on Students* – There were both cognitive and affective benefits for students.
 - ♦ *Cognitive Benefits* – Of the four projects, the greatest impact on student achievement (as measured by provincial tests) was found for the projects that targeted specific groups of students. Because ESL students usually have subject-specific learning needs, interventions targeted to them have the greatest promise of success. Of the projects that used local or standardized tests, the project that targeted students who were at risk of not completing high school showed the greatest impact.
 - ♦ *Affective Benefits* – Three of the case studies measured student satisfaction and three also measured parent satisfaction. Student satisfaction increased significantly in two of the projects and declined in one. In reporting the results for their projects, coordinators also noted students' enthusiasm for their work.
- *Teacher Capacity* – Professional development was an important component in all four cases. In the three projects that measured teacher satisfaction, this measure demonstrated the single largest impact of the project, with three-year average effects ranging from 0.46 to 1.68.
- *Parents* – Three of the four projects included measures of parent satisfaction. As with students and teachers, satisfaction was largely positive. The reports also noted special efforts to provide useful information to parents and involve them in the education of their children.

- *Innovation* – School authorities had to indicate how their Cycle 2 AISI projects differed from Cycle 1. In most cases, this was interpreted to address a different level of instruction (i.e., grades 1 to 6, carried over to grades 7 to 9) or a change in subject area. Innovation defined more creatively was modest. Two projects deemed to be innovative were highlighted. One involved getting a whole community involved in promoting literacy and the other was a partnership between the school district and the University of Alberta and Capital Health in increasing student health and fitness.

Challenges

Review of the AISI Project Final Reports identified a number of ongoing challenges for project teams. These challenges were also evident in Cycle 1 but have persisted. They appear to be issues related to large-scale improvement initiatives.

- *Time* – This resource remains a continuing issue not only for schools and teachers, but also parents and students. There is seemingly never enough of this resource to accomplish all that is intended.
- *Staff Continuity* – Changes in school and/or district leadership created problems in some instances. Changes in other school staff negatively affected some projects.
- *Engagement* – The majority of teachers and administrators were engaged in and committed to continuous improvement. However some teachers and administrators were not as engaged.
- *Measuring Outcomes* – Finding appropriate measures, collecting and analyzing data, interpreting and reporting results continue as major challenges for project teams.
- *Parental Involvement* – This continues to be a concern. Efforts to provide opportunities for parents to learn about new approaches and involve them in the school's AISI projects remain a challenge.

Recommendations for Future Cycles

The results of two cycles of AISI lead to a number of recommendations for all partners during future cycles. These recommendations relate to learning, ongoing support, knowledge mobilization, evidence, engagement, capacity building, and innovation and research.

Focus	#	Recommendation
It is recommended that:		
<i>Focus on Learning</i>		
	1.	AISI continue to focus on improving student learning and performance to address local needs and circumstances.

Ongoing Support

Funding 2. Alberta Education continue to fund AISI as a targeted initiative.

Project Support 3. School authorities ensure appropriate and adequate project support through appointment of one or more project coordinator(s) responsible for overall coordination and support of each project.

4. The School Improvement Branch continue to provide support to school authorities in the areas of project design, implementation, and evaluation.

Leadership 5. Education partners continue to demonstrate leadership and work collaboratively so that AISI fulfils its potential.

6. Leadership for AISI be shared among all who participate in the initiative: province, school authority, school, and project.

Knowledge Mobilization

Integrating Knowledge 7. School authorities and schools integrate AISI findings into their policies, programs, and practices.

8. Universities extend what has been learned through AISI more broadly in faculty of education departments and integrate lessons into courses and programs.

Sharing Knowledge 9. School authorities share their knowledge, both within the district, its schools, and with others (through a variety of ways including the AISI Clearinghouse).

10. The School Improvement Branch continue to expand the development of the Clearinghouse and support the sharing of effective practices.

11. Education partners (teachers, administrators, trustees, government, parents) share effective practices with their constituents.

Evidence

Measures 12. School authorities continue to select relevant measures, to analyze and interpret findings, and to document evidence of success.

13. That school authorities use measures that provide evidence of impact on student learning.

Use in Decisions 14. Education partners continue to assess AISI and to use evidence to inform recommendations.

15. Alberta Education use AISI evidence to inform policies, programs, practices, and decision making.

Engagement

Involve Staff/ Parents

16. School authorities involve staff, parents, and school councils in all phases of planning, implementation, and analysis of results.
17. Schools make greater efforts to involve parents and school councils in school and their AISI projects.

Parental Involvement

18. Parents actively engage as partners with the school in the education of their children.
19. Parents become involved in AISI through their schools and through their school councils.

Capacity Building

Professional Development

20. That all AISI partners continue to provide professional development opportunities to their constituents given the importance of ongoing professional capacity building.
 - (a) School authorities provide opportunity for focused and sustained professional development that focuses on improving student learning through achievement of project goals.
 - (b) Schools incorporate professional development for staff in their improvement plans.

Collaboration

- (c) Schools plan for staff collaboration on AISI activities. Meaningful involvement of teachers in planning, developing, and implementing instructional strategies, and analyzing and reporting results foster staff capacity and commitment to the project.
 - (d) The Alberta Home and School Councils' Association and Alberta Regional Consortia continue to provide learning opportunities and support for parents and school councils including knowledge about and involvement in AISI.
 - (e) Alberta Education enhance its staff knowledge about AISI and integrate what was learned during Cycle 2 into its policies, programs, and practices.
21. Professional development be based on a comprehensive planning approach⁵ and take a variety of forms including professional learning communities and in-school time for staff collaboration.

University Practicum

22. University student teachers be placed in AISI schools to learn firsthand about new instructional strategies and to participate in a culture of continuous improvement.

⁵ *A guide to comprehensive professional development planning.* (2005). Edmonton, AB: Education Partners.

Innovation and Research

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| <i>Innovation</i> | 23. | School authorities embrace innovation in proposing new AISI projects. |
| <i>Collaborative Inquiry</i> | 24. | Schools support teachers in collaborative inquiry as a means to investigate the impact of interventions on student learning. |
| <i>In-depth Analysis</i> | 25. | Universities encourage more graduate theses and dissertations on AISI topics. |
| <i>Research Agenda</i> | 26. | The School Improvement Branch, in collaboration with education partners, develop a research agenda for AISI. |
| | 27. | Multidisciplinary and international scanning be incorporated into AISI work. |
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Conclusions

Over six years of implementation, AISI has had a profound impact on the culture of schools in Alberta. A culture of collaboration invites participation and develops ownership and commitment. AISI exemplifies this spirit of collaboration through its partnership with teachers, administrators, parents, trustees, academics, and government.

There is a renewed focus on learning as the central purpose of schooling. Teachers, students, parents, and administrators are developing a common language of school improvement. The language of improvement – goals, strategies, measures, baselines, targets, and results – is now widely understood and used.

Teachers and administrators are making informed decisions about student learning and instructional practices based on multiple sources of data collected through appropriate assessment strategies. Schools and districts are surveying students, parents, and staff to get their input into educational processes and desired outcomes. There is an increased emphasis on professional development using a variety of strategies to meet local needs. A culture of shared/distributed leadership has become more commonplace in Alberta schools. Teachers and administrators make a concerted effort to engage parents in meaningful ways in their children's learning and school improvement activities. The six years of AISI implementation show that with resources and commitment, teachers are finding effective instructional strategies to help students succeed. AISI represents an effective approach that focuses on improving student learning through partnerships and collaboration in a culture of inquiry and continuous improvement. AISI continues to refine its processes and is putting higher expectations in place for local projects to improve student learning during Cycle 3.

The following sections offer conclusions about the AISI program, changing the culture of education, improvement over time, and innovation. Ongoing challenges include measuring outcomes, time, and change.

The AISI Program

AISI is a bold approach to supporting the improvement of student learning by encouraging teachers, parents, and the community to work collaboratively to introduce innovative and creative initiatives based upon local needs and circumstances. The program has stood the test of time and Cycle 2 confirmed AISI's 11 attributes⁶:

1. *Partnership* – AISI is a partnership among teachers, superintendents, trustees, business officials, universities, parents, and government. The AISI partnership is characterized by trust, collaboration, and teamwork among the education partners who share a commitment to improving education for Alberta students, who are the beneficiaries of this strong and diverse partnership.
2. *Catalyst* – AISI is a catalyst for change. The common goal, targeted funding, partnership, positive climate, and supportive infrastructure act in concert to achieve significant change in teaching and learning.
3. *Student focused* – AISI communicates a compelling commitment to school improvement that aligns with the long-term vision of Alberta Education. Students are active and engaged learners. AISI projects continue to strengthen the focus on student learning and accommodate the diverse learning needs of individual students and special populations.
4. *Flexibility* – School authorities choose strategies that enhance learning in the local context.
5. *Collaboration* – Collaboration is an essential element for school improvement. Projects are developed and implemented with meaningful involvement of the school community. The active engagement of staff, students, parents, and partners is critical to project success.
6. *Culture of Continuous Improvement* – AISI promotes a culture of continuous improvement that is evident in schools and jurisdictions that clearly align school improvement goals and classroom practices. Continuous improvement is a shared responsibility.
7. *Evidence-based Practice* – Evidence that educational practices benefit student learning and performance, through the collection, analysis, and interpretation of data, is foundational to AISI. The use of multiple methods and data sources gives Albertans confidence in the results.
8. *Research-based Interventions* – Solid research provides a reasonable expectation that improvement will occur. Implementation of effective instructional strategies is core to AISI projects. AISI is a vehicle for testing the efficacy of these interventions in the Alberta context.
9. *Inquiry and Reflection* – A clear focus on student learning is the foundation for inquiry and reflection. Analyzing strategies that worked and building on them lead to continuous improvement. Strategies that did not work as expected can provide important information about what needs to change and what might be successful.

⁶ See Alberta Learning AISI (2004) and AISI Education Partners Working Group (2006).

10. *Building Capacity and Sustainability* – Professional development continues to ensure that teachers and students benefit from the emerging knowledge, practices, and technologies that are being developed through AISI. Effective PD is planned, systemic, and sustained.
11. *Knowledge* – AISI contributes to the body of knowledge about teaching, learning, and instructional improvement. The AISI family shares this knowledge widely through conferences, reports, the Clearinghouse, and provincial networking sessions.

Changing Culture

The culture of education in Alberta is changing. AISI has provided the means, the impetus, and the opportunities for educators to become partners in their work. Funding provides the resources to make change possible. Annual workshops and conferences create opportunities for cross-district collaboration among coordinators, lead teachers, administrators, and others involved in changing education to improve teaching and learning. AISI reports document the knowledge gained through trying new approaches to teaching and learning, measuring the intended outcomes, reflecting on affective and behavioral dimensions of change, and adopting what works.

Before AISI, educators interacted largely among themselves (that is, teachers among teachers, administrators among themselves, and so forth). They now talk to one another and actively work toward finding solutions to common problems. Teachers are working with other teachers, not only in their own schools, but also across schools in the district, and sometimes across districts.

According to a seasoned AISI coordinator, AISI has had a deep and lasting impact on teaching. Change is gradual so we often think it is not occurring. In reflecting on the effect of AISI on teachers, students, schools, and learning, one needs to think back to life before AISI.

An enduring legacy of AISI is the development of improved relationships: among the education partners, among staff in schools, and between educators and academics, teachers and students, and teachers and parents. AISI projects reduce the isolation many teachers feel in their classrooms. By working together, teachers develop a renewed sense of professionalism and pride in their enhanced instructional repertoires. (Alberta Learning AISI, 2004, p. 50).

Improvement Over Time

Learning can take many forms including academic achievement, diverse outcomes such as improved knowledge, skills (e.g., creative and critical thinking, meta-cognitive skills, etc.), attitudes (e.g., dispositions, inclinations, propensities, values), and desired behaviors (e.g., engagement, lifelong learning, etc.). Ways to measure student outcomes include assessment, surveys, administrative data, and observation.

However, student learning is unlikely to improve if teachers do not also learn more effective ways to help students learn. Therefore, teacher learning is an implicit goal of the initiative. Desired outcomes for teachers include knowledge, attitudes, skills, aspirations, and behavior.

Improvement over time was established through effect size analysis which estimates the degree to which an impact is evident. The greater the value, the greater the degree to which the phenomenon under study is manifested. Cycle 2 of AISI demonstrated positive effects on four types of measures; the largest effects were for student achievement measured locally and teacher growth and satisfaction (0.33 and 0.34, respectively). Student and parent satisfaction (0.20) and achievement on provincial tests (0.07) were also positive.

These results indicate that AISI has had a positive impact on learning. Students improved their learning according to a variety of measures, teachers expressed positive opinions regarding their own and their students' learning, and parents and students reported satisfaction with aspects of the AISI program.

Reeves⁷ (2005) called AISI "the gold standard" of improvement models. He noted that AISI provides a clear message to universities and support systems that claims of "research" are not worthy of the name if they do not reflect student achievement results.

Qualitative evidence demonstrates that students improved their confidence, behavior, attitudes, and engagement. Teachers increased their capacity to incorporate a number of effective practices during Cycle 2. Practices included instructional strategies, student assessment, project management/coordination, professional development, and parental involvement and communication. Factors contributing to improvement included time and resources, professional development, teacher collaboration and sharing, regular assessment, and leadership/staff development.

Innovation

AISI is intended to foster innovation in order to improve teaching and learning. The initiative encourages school authorities to try new approaches to address local student needs. Defined broadly, innovation includes research-based strategies that have not been previously used in a particular school authority or school. Flexibility, risk taking, and thinking "outside the box" are encouraged.

Demonstrating that their Cycle 2 projects were new and different often meant that school authorities extended interventions focused on literacy or numeracy to a subsequent level (e.g., from elementary to junior high school). While this approach expanded the knowledge and skills to more teachers, it did not necessarily introduce new and innovative approaches to teaching. Cycle 3 should put greater emphasis on encouraging innovation.

⁷ Reeves, D.B. (2005, April). *Execution: Transforming research into action*. Presentation at the annual joint conference of the College of Alberta School Superintendents and Alberta Education, Edmonton, AB.

Cycle 2 included some innovative projects that have received wide recognition. These included the Healthy Hearts Project, the community-based Learning through Literacy Project, and the student created and directed Frankenstein video that was accepted by the New York International Independent Film and Video Festival.

AISI provides a clear opportunity to try new things, to take risks. Small specialized projects are more likely to be innovative than large district-wide projects. School authorities should avail themselves of AISI to be creative and innovative.

AISI Desiderata

What does the future hold for this six-year-old province-wide improvement initiative? Evidence from two cycles of implementation suggests that AISI is well on its way to being one of the most powerful educational endeavors in Alberta. Cycle 3 is already well under way and promises to continue improving student and teacher learning and performance in a culture of inquiry, collaboration, and continuous improvement. Goodwill and collaborative capacity attest to the return on investment of government resources committed to AISI.

May AISI live up to its potential and help Alberta students and teachers become the best they can be.

May school authorities take the opportunity AISI affords to be truly innovative.

May the research community avail itself of the opportunity for unprecedented study of a collaborative action research enterprise.

May government incorporate the lessons from AISI into its policies, programs, and practices.

May others learn from the experiences of this province-wide improvement initiative.

May Alberta students benefit from lessons yet to be imagined!

